



Third West Weekly Report 9/26/11 - 9/30/11 Shepherd, Michael

to:

Joyce Ackerman, 'Craig Barnitz (cbarnitz@utah.gov)' 10/10/2011 08:12 AM

Hide Details

From: "Shepherd, Michael" < Michael. Shepherd @ Pacifi Corp.com>

To: Joyce Ackerman/R8/USEPA/US@EPA, "'Craig Barnitz (cbarnitz@utah.gov)'" <cbarnitz@utah.gov>

6 Attachments











Third West Weekly Log 2011-39.pdf Weekly Report 9-26-11 to 09-30-11.pdf 221469-1.pdf 221575-1.pdf 221773-1.pdf



221950-1.pdf

Joyce & Craig,

Attached are the air monitoring results for 9/26 - 9/30. All results came back negative, except for the 1 hit on 9/26/11 of chrysotile previously reported.

Also attached are the environmental audits, daily checklists (Weekly Report 09-26-11 to 09-30-11) and construction activities for this timeframe (Third West Weekly Log 2011-39).

Please let me know if you have any questions.

Thanks,

Mike Shepherd Project Manager Rocky Mountain Power - Major Projects 801.220.4584 Office 801.631.1310 Cell 801.220.2797 Fax michael.shepherd@paclficorp.com



October 4, 2011

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 221773-1 None Given

Project Description:

3rd West Sub Rocky Mtn.

Power

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 221773-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 221773-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

3rd West Sub Rocky Mtn. Power

Date Samples Received:

October 3, 2011

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

October 4, 2011

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ID No	umber	Analyzed	Volume	Asbestos	Sensitivity	Concentration	Loading
				Sampled	Structures			
					Detected		•	
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-92811-E	EM	804177	0.0990	792	ND	0.0049	BAS	BAS
3W-92811-S	` EM	804178	0.0990	79 2	ND	0.0049	BAS	BAS
3W-92811-N	EM	804179	0.0990	79 2	ND	0.0049	BAS	BAS
3W-92811-W	EM	804180	0.0990	79 2	ND	0.0049	BAS	BAS
3W-92911-E	EM	804181	0.0880	927	ND	0.0047	BAS	BAS
3W-92911-S	EM	804182	0.0880	923	ND	0.0047	BAS	BAS
3W-92911-N	EM	80418 3	NA	0	NA			
3W-92911-W	EM	804184	0.0880	921	ND	0.0048	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity
Average Grid Opening in mm² = 0.011

Effective Filter Area = 385 sq mm

Digitally signed by Gine Vettraino Date: 2011.10.04 11:13:29 -06'00'

DATA QA

PACIFICORP OPERATIONS - Field Construction Representative Dally Log Third West Sub - Rebuild DATE: Monday, September 26, 2011 PROJECT NAME:

PO & Work Order NO. :	30000	078050 / 10035803	MAIN CONTRACTOR:	RMI	P
Crew Start Time:	7:00	Crew Stop Time:	16:15	Tot Hrs mns:	9:15
FCR Start Time:	6:50	FCR Stop Time: _	16:20	Tot Hrs mns:	9:30
Use military time format 00:0	0			_	
WEATHER CONDITIONS:		Partly C	loudy - 76 degrees		
		al comments, instructions to			
		sonnel provided direction regarding			
		oup) of yard rock from the "clean" zo			
		a power washer on-site for washing			
		d and ESA is sweeping and cleaning odon't have all of the materials they			
		on Tu esday, 9/27. N ewman has as			
		not take any material more than 1%.	incu italit to go allead alla sa	inpic the exolus	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	,, ao 21ana 3ann				
					•
		·			ŀ
IF WORKING IN ENERGIZ					 , ,
Dispatcher login, name and tim					
Dispatcher logout, name and ti	me: Kim Batt				
DISCREPANCIES:			MMEDIATE CORRECTIV	E ACTION TA	KEN:
	· · · · · ·				
	· · · · · · · · · · · · · · · · · · ·				
		· •			
DELAYO OD LOGT TIME	NOOLINTERE				
DELAYS OR LOST TIME E	NCOUNTERE	ν:			
					i
EQUIPMENT (working, del					
Pickup, portable tollet, forklift, 2 dul bobcat, power washer, water truck	•	ler, conex, exclusion zone conex (2), wa	ater wagon, portable wasn-down	structure, trackno	e, mini-ex,
poboat, power washer, water truck					
			····		
OSHA Recordable Safety	ncidents:		Reported	by:	Time:



Russ Johnson

Field Construction Representative

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME:	Third West	Sub - Rebuild	DATE : Tuesd	ay, September :	27, 2011			
PO & Work Order NO. :	30000780	50 / 10035803	MAIN CONTRACTOR	: Cache Valle	ey Elec tr ic			
Crew Start Time:	6:50	Crew Stop Time:	16:30	Tot Hrs mns:	9:40			
FCR Start Time:	6:50	FCR Stop Time:	17:50	Tot Hrs mns:	11:00			
Use military time format 00:		r or coop runor						
· · · · · · · · · · · · · · · · · · ·								
WEATHER CONDITIONS	:	Sur	nny - 80 degrees					
DESCRIPTION: (work pe								
R&R set up four monitors. Ne tape for wrapping up the loads regarding the procedure for we exclusion zone was loaded, st include the time to place the vafter waiting for notification that get loaded and take the second to the site and collected the a	s of excavated material rapping the excavated carting at 11:00 and left isqueen in the beds of at the material could be alload to the landfill.	Eagle was on site for about material. The first load (truck the site at 12:05. Loading, we the truck and pup. A second edelivered to Grassey Mtn. The second to be delivered to be second to the day by	two hours and provided inst #1102/pup #1194) of excav rapping, and washdown too truck (#1125) arrived at 12: he second truck will return in a scraping up gravel from the	truction to the Ne verted material from k 65 minutes. Th 10 and left the site in the morning with e "clean" yard. R	wman crew n the iis did not e at 2:20, h a pup traile			
IF WORKING IN ENERGIZ	ZED SUBSTATION:	· · · · · · · · · · · · · · · · · · ·			_			
Dispatcher login, name and tir		30 (got busy and didn't call for	a while)					
Dispatcher logout, name and								
DISCREPANCIES:	[,,		IMMEDIATE CORRECT	VE ACTION TA	AKEN:			
No TOC is identified for the cap b	anks and associated get-	a-ways.	I discussed this with Brent Wig confirm our discussion.					
*								
				 				
DELAYS OR LOST TIME	ENCOUNTERED:							
The disposal site, I assume to be Grassy Mountain, held up the dumping of the first truck today until they could evaluate what the material was that was being delivered. That is why the second truck didn't make a run to the landfill and will wait until tomorrow morning to make the run. I will find out more specifics on Wednesday to determine if this is a one-time delay, or if this will be problematic going forward. Additionally, SLC is refusing to allow Newman to fill their water trucks from a local hydrant and is requiring them to go to the Water Dept on 1500 South West Temple to pick up water. It appears this is a new city ordinance and not anything specific to Newman. EQUIPMENT (working, delivered, idle): Pickup, portable toilet, forklift, 2 dumpsters, office trailer, conex, exclusion zone conex (2), water wagon, portable wash-down structure, trackhoe, mini-ex, bobcat, power washer, water truck								
				1.1	T :			
OSHA Recordable Safety	incidents:	· · · · · · · · · · · · · · · · · · ·	Reported	יסנ:	Time:			
		·						



Russ Johnson

Field Construction Representative

PACIFICORP OPERATIONS - Field Construction Representative Daily Log PROJECT NAME: Third West Sub - Rebuild DATE: Wednesday, September 28, 2011 PO & Work Order NO. : 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric Crew Start Time: 6:50 Crew Stop Time: 16:30 Tot Hrs mns: FCR Start Time: 6:50 FCR Stop Time: 17:00 Tot Hrs mns: Use military time format 00:00 **WEATHER CONDITIONS:** Sunny - 85 degrees DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. Newman has not been able to do any additional excavation in the exclusion zone because their trucks are tied up at Grassy Mountain until Grassy completes an analysis of the material which will tell them where they can dump the material. Newman sho some grades to allow them to begin some initial grading in the east half of Zone 2. We didn't see any trucks back from Grassy Mtn today s will hopefully be moving gravel on Thursday. Wilding took a sample of the backfill from the 2004-2005 project and will provide Newman witl a proctor so this material can be used for backfill in Zones 1, 2, and 3. Contractors: CVE = 1, Newman = 3, R&R=1, Wilding = 1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Ken Barto 0650 Dispatcher logout, name and time: Al Swinski 1700 **DISCREPANCIES:** IMMEDIATE CORRECTIVE ACTION TAKEN: We identified that the base of the east fence line is approximately .5' higher than shown on None required, we'll just work with the higher elevation. the arading plan. I spoke with Brent Wiggins regarding this issue and he indicates that we' just need to work with the elevation as it exists and will keep the road grade as drawn up. This will mean that we will be drooping 2.5' from the fence line to the edge of the new road. The challenge with this will be trying to place yard rock on the slope without it sloughing down onto the roadway

DELAYS OR LOST TIME ENCOUNTERED:

The Newman trucks we loaded out yesterday were not able to dump at the Grassy Mtn location and had to return to the Newman yard. They went back out this morning and we have not yet been notified that they were able to dump today.

EQUIPMENT (working, delivered, idle):

Pickup, portable toilet, forklift, 2 dumpsters, office trailer, conex, exclusion zone conex (2), water wagon, portable wash-down structure, trackhoe, mini-ex, bobcat, power washer, water truck

OSHA Recordable Safety Incidents: Reported by: Time:



Russ Johnson

Field Construction Representative

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME:	Third Wes	DATE: Thursday, September 29, 201						
PO & Work Order NO. :	30000780	050 / 10035803	MAIN CONTRA	ACTOR :_	Cache Valle	ey Electric		
Crew Start Time:	7:00	Crew Stop Time:	16:30	Ŧ	ot Hrs mns:	9:30		
FCR Start Time:	7:00	FCR Stop Time:	17:30	T	ot Hrs mns:	10:30		
Use military time format 00:00		-			-			
•					•			
WEATHER CONDITIONS:		Suni	ny - 85 degrees		<u> </u>			
DESCRIPTION: (work perfo		ammanta instructions to	ontroctor # of	0 H 0 14 / MO 0 MO	horo oncito	`		
Monday. The trackhoe was wash cutting the SE corner and east fact the elevation of the retaining wall elevation. Mr Schmidt returned to company has acquired as a result ahead with our hauling plans for that will indemnify his company from their property. In an effort to encount of the paperwork was forwarded to the second of the paperwork was forwarded to the paperwork was forwarde	ce of the yard down along the south side the site around 3 to f CVE/Newman Monday, Tuesday, om any damages, ourage him to allow	n to grade and identified an issude of the east yard, with the retal 30 and expressed concerns ab traveling equipment across their and W ednesday of next week both evironmental and personal voluments and word and word and word and monday	ie with the elevation aining wall being apoint the environmer reproperty. He has the indicates that he indicates that he indicates that he with our hauling please.	n of the road oprox 2'-2" lo ntal and pers given us vene is having s a result of ans, i comm	dway in that a ower than the sonal liability the rbal permissional a legal document the contractor hitted to makin	rea relative (finish road hat his on to move nent drawn u r driving on ng sure that		
IF WORKING IN ENERGIZED Dispatcher login, name and time:					<u></u>			
Dispatcher logout, name and time.								
DISCREPANCIES:	J. [Daily NielsOI		MMEDIATE COF	RECTIVE	ACTION TA	KEN.		
The retaining wall along the SE portion	on of the vard is 2.14							
for the new roadway running east and			outh retaining walls.					
A PEC Development representative s a new parking structure in the area when the area w			lotified Mike Shepher	rd and Scott C	Collard.	<u>.</u>		
								
DELAYS OR LOST TIME EN	COUNTERED:							
EQUIPMENT (working, deliv	ered idle):			·				
Pickup, portable toilet, forklift, 2 dump bobcat, power washer, water truck		onex , exclusion zone conex (2), wa	ater wagon, portable v	wash-down st	ructure, trackho	De, mini-ex,		
		•						
OSHA Recordable Safety In	cidents:		R	eported by	/ :	Time:		
			<u> </u>					



Russ Johnson

PACIFICORP OPERATIONS - Field Construction Representative Daily Log Third West Sub - Rebuild Friday, September 30, 2011 PROJECT NAME: DATE: 3000078050 / 10035803 MAIN CONTRACTOR: Cache Valley Electric PO & Work Order NO. : Crew Stop Time: Crew Start Time: 6:50 14:30 Tot Hrs mns: FCR Start Time: 6:50 FCR Stop Time: 15:30 Tot Hrs mns: Use military time format 00:00 **WEATHER CONDITIONS:** Sunny - 90 degrees DESCRIPTION: (work performed, general comments, instructions to contractor, # of crew members onsite.) R&R set up four monitors. Newman is continuing the grading of the east side of the yard and stockpiling of the material in the center of the substation. They have graded from the SE corner of the yard to the south side of the east gate. Brent Wiggins came to the site to discuss the elevation issues we encountered yesterday. It was determined that we will need to modify the grading plan to adjust for the difference between the elevation of the south retaining wall and the top of roadway as it runs east and west along the south face of the substation. Brent will work on modifying the drawing to show the new control points we will be working with in order to accomplish this. There will need to be some "field to determine" action on site to make this work. Newman indicates that they have four truck/pups lined up for Monday and Tuesday, and Wednesday if necessary, to haul waste material to Grassy Mountain. The trucks will be provided by Grassy Mountain. Our hope is that by Friday of next week we will have the backfill in place and be ready for the concrete crew to come in on Monday, October 10. Contractors: CVE = 1, Newman = 3, R&R=1. IF WORKING IN ENERGIZED SUBSTATION: Dispatcher login, name and time: Ken Barto 0710 Dispatcher logout, name and time: Jim Bowman 1520 DISCREPANCIES: IMMEDIATE CORRECTIVE ACTION TAKEN: **DELAYS OR LOST TIME ENCOUNTERED:** EQUIPMENT (working, delivered, idle): Pickup, portable toilet, forklift, 2 dumpsters, office trailer, conex, exclusion zone conex (2), water wagon, portable wash-down structure, trackhoe, minl-ex, bobcat, power washer, water truck



OSHA Recordable Safety Incidents:

Russ Johnson

Reported by:

Time:



3rd West Substation Site Project Safety Audit

Project: 3rd West Sub Station		Date: 9/26/11						
Location:	3rd West, 1st South, SLC	Job Number:						
Survey Conducted By: <u>lustin Kargis</u>			Title:					
		In Compliance	Out of Compliance	N/A	Corrective Action Taken and			
Standard	Title				Date			
1926.59	Hazard Communication P rogram, List of Chemicals, Training, MSDSs.			х				
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x				
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.			х				
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			x				
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toeboards shall be installed.			х				
	Head protection, where there is a possible	x						

1926.100 (a)

danger of head injury.

·		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			X	·
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			x	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toeboards.		ľ	x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.	v		x	
1926.25 (a)	D ebris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.		·	x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	,		x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.			х	

Standard	<i>Titl</i> e	In Compliance	Out of Compliance	N/A	Corrective Action Taken and Date
1926.451 (a)	Scaffolding shall have guardrails and toeboards when more than 10 feet high and when less than 45 inches of work space.			x	
1926.405 (g)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			х	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.		,	x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x .	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.			x	
1926.150 (c)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.			х	
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	

	r	In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.	-		х	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.			x	
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	·
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.			x	
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f) (7)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer of the tool is double insulated.			x	
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			x	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title	□			Date
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			x	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	
1926.550 (b)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

Comments:

Met with Kayli Roller to discuss water control/clean up items.

Robert from Eagle on site to instruct on worker decontamination procedures.

Newman continued to scrape, pile, and load yard rock for removal from site.

Street sweeper cleaned circus leftovers in adjacent parking lot throughout the day.

<u>Conducted exclusion zone sampling in anticipation of work to be done there. However, no work was performed in this zone today.</u>





3RD WEST SUBSTATION REMEDIATION PROJECT HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

DATE:	9/26/11
General	Work area Health and Safaty Inspection
☑	Work area Health and Safety Inspection Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
v.	activities for the day
NA Safets	Planning or "Tailgate" mandatory meeting for all employees and contractors prior
	nmencement of any site work. Instruction, review hazards, health & safety issues
	ny modifications to the CSHASP
	azard and safety instruction for all first time employees, contractors or visitors
1,412,000	Complete Employee Meeting Record Form B (where applicable)
na	Document required Respirator Training completion with Form H
NA	Complete all CSHASP Forms (for applicable activities planned for that day)
na	Illness/Injury Report Form A
na	Site-Specific Training Record Form C
na	Hot Work Permit Form D
na	Trench/Evacuation Permit Form E
na	Combined Space Entry Permit From F
☑	Secure the site at the end of the workday
G 15	
Sampling NA Soil C	
MASON C	Confirmation sampling for any newly excavated areas Stationary Air Monitoring during contaminated soil removal around the perimeter of the
	exclusions zone
NA Person	nal Breathing Zone Monitoring on persormel conducting contaminated dust and soil
remov	
	ally photograph each sample location and at any place field sampling personnel
_	nined necessary
	Electronically file photo files into the on-site database
	Complete Field Documentation
	Field Sample Data Sheets (FSDS)
☑	Logbook
	On-site computer database
$\overline{\square}$	Label each sample media with a unique number
$\overline{\square}$	Seal sample(s) in zip lock plastic bags
	Complete and include Chain of Custody (COC) Form required for shipping of samples to
.	appropriate laboratory
☑	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental
NA Davia	Samples
	w and disseminate sample results as received from the laboratories to Project ger and other appropriate managers and employees
	onically file sample reports into on-site database
MALICUI	omeany the sample reports into on-site database



3rd West Substation Site Project Safety Audit

Project: 3rd West Sub Station			Date: 9/27/11					
Location:	3rd West, 1st South, SLC	Job Number:						
Survey Conducted By: <u>Justin Kargis</u>			T	itle: _				
		In Compliance	Out of Compliance	N/A	Corrective Action Taken and			
Standard	Title				Date			
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x				
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x				
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.			х				
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			x				
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toeboards shall be installed.			x				
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x						

Standard	<i>Title</i>	☐ In Compliance	Out of Compliance	N/A	Corrective Action Taken and Date
Siunuuru			<u> </u>		Dute
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	·
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.	,		×	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toeboards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.			х	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			х	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.			x	

-

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toeboards when more than 10 feet high and when less than 45 inches of work space.			x	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	×		,	
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.			x	
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.			x	
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	

		In Compliance	Out of Compliance	l N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.			x	
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			x	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.			x	
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer of the tool is double insulated.	,		x	
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			х	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	

.

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title			\Box	Date
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.		i.	x	·
1926.6 0 2 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.		·	x	
1926.550 (b)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

Comments:

- -Bi-Weekly meeting at NTO items discussed include: use safety checklist to help keep track of trucks as they leave site, Eagle to keep 10-day notification for asbestos removal on hold.
- -Newman began excavating in exclusion zone at approximately 11:00am. Loaded truck #1102 with pup #1194 which left the yard at approximately 12:03 after being pressure washed.
- -Truck #1125 arrived at approximately 12:10 was filled, wrapped, and washed. This truck left the site at approximately 2:20 pm.
- -Richard Benson from Artistic Printing next door to the site approached Justin Kargis and Neil Love with questions about work activities on the site.
- -Communications between Newman and potential dump sites pertaining to contamination tolerances and dumping operations continued throughout the day.

Newman observed exclusion zone practices by watering excavations and equipment, wearing personal protective equipment, and proper decontamination.





3^{RR} WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

DATE:	9/27/11
General	
	Work area Health and Safety Inspection
☑	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site activities for the day
Ø	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors Complete Employee Meeting Record Form B (where applicable
NA	Document required Respirator Training completion with Form H
 ✓	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
	Confirm return of waste material manifest documents for each load with site manager.
NA Comp	lete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
<u>. <u>x</u></u>	Secure the site at the end of the workday
G II	

. -	
Sam pl ing	
NA	Soil Confirmation sampling for any newly excavated areas
	Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusions zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary
NA	Electronically file photo files into the on-site database
NA	Complete Field Documentation
	Field Sample Data Sheets (FSDS)
	Logbook
. NA	On-site computer database
	Label each sample media with a unique number
	Seal sample(s) in zip lock plastic bags
NA	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
NA	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples



3rd West Substation Site Project Safety Audit

Project: 3rd West Sub Station Location: 3rd West, 1st South, SLC Survey Conducted By: Justin Kargis		Date: <u>9/28/11</u> Job Number: Title:											
										In Compliance	Out of Compliance	N/A	Corrective Action Taken and
								Standard	Title				Date .
1926.59	Hazard Communication P rogram, List of Chemicals, Training, MSDSs.			x									
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x									
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.			х									
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х									
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toeboards shall be installed.			х									
	Head protection, where there is a possible	x											

1926.100 (a)

danger of head injury.

	·	In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a)	Excavation protective systems; examination by competent person when less than 5 feet in depth.	1		х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			x	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toeboards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	D ebris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	-		x	
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.			×	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toeboards when more than 10 feet high and when less than 45 inches of work space.			x	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.	•		x .	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	*
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.			x	
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.			х	
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.			х	
1926.350 (a) (9)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			х	
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.			х	
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.			x	
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer of the tool is double insulated.			х	
1926.556 (b)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.			х	
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	

		In Compliance	Out of Compliance	N/A	Correct <i>ive A</i> ction Taken and
Standard	Title				Da te
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.		·	x	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			x	

Comments:

- -R7R took 10 soil samples in exclusion zone excavation site for new control building. Took these samples to Dixon at approximately 10:30 and asked for rush turn-around.
- -Newman shot grades for zone 2 elevations.
- Tom Wilding came in the afternoon to collect soil samples along the east boundary fence.
- -No exclusion zone work today.





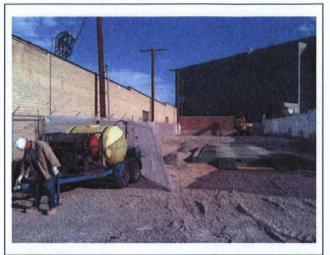
3^{RR} WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

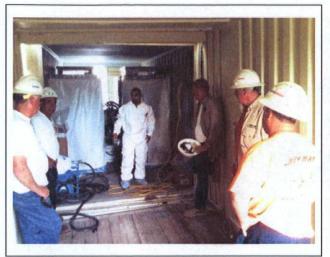
DAILY CHECKLIST

DATE:_	<u>9/28/11</u>
Gener	<u>al</u>
	Work area Health and Safety Inspection
\square	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site activities for the day
Ø	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prio to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors Complete Employee Meeting Record Form B (where applicable
NA	Document required Respirator Training completion with Form H
I	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA Co	emplete all CSHASP Forms (for applicable activities planned for that day)
N.	A Illness/Injury Report Form A
N/	Site-Specific Training Record Form C
N/	Hot Work Permit Form D
N.	Trench/Evacuation Permit Form E
NA.	Combined Space Entry Permit From F
☑ Se	cure the site at the end of the workday

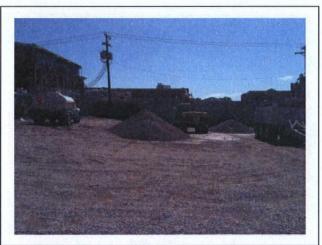
<u>Sampling</u>	
NA	Soil Confirmation sampling for any newly excavated areas
☑	Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusions zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary
NA	Electronically file photo files into the on-site database
NA	Complete Field Documentation
	Field Sample Data Sheets (FSDS)
	Logbook
NA	On-site computer database
	Label each sample media with a unique number
	Seal sample(s) in zip lock plastic bags
NA	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
NA	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples



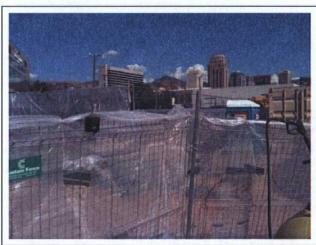
РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc. 47 West 9000 South, Suite #2, Sandy, Utah 84070

(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY: SCALE: REVIEWED BY: DCR DRAWN BY: DATE: FILE: 9/26/11 **JMK**

SITE PHOTOGRAPHS



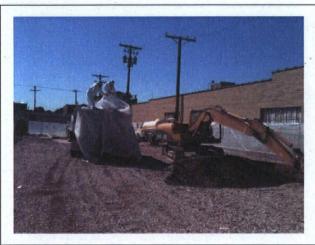
3rd West Substation "2011 Upgrade Project" Salt Lake City, Utah



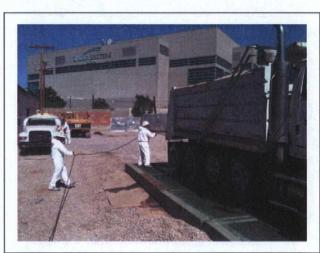
РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

 DESIGNED BY:
 SCALE:
 REVIEWED BY:

 DCR

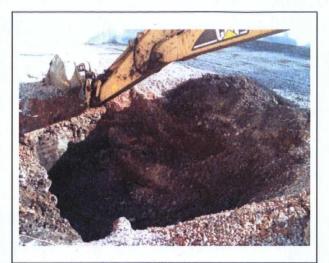
 DRAWN BY:
 DATE:
 FILE:

 JMK
 9/27/2011
 FILE:

SITE PHOTOGRAPHS



3rd West Substation "2011 Upgrade Project" Salt Lake City, Utah



РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY: SCALE:		REVIEWED BY: DCR	
DRAWN BY: JMK	DATE: 9/28/2011	FILE:	

SITE PHOTOGRAPHS



3rd West Substation "2011 Upgrade Project" Salt Lake City, Utah



September 29, 2011

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project #1 P.O. #

RES 221469-1 None Given

Project Description:

3rd West Sub - Rocky

Mtn. Power

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (HVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RE**S** 221469-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by **NVLAP** or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 221469-1

Client:

· R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

3rd West Sub - Rocky Mtn. Power

Date Samples Received:

September 28, 2011

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

September 28, 2011 - September 29, 2011

Client	Lab	<u> </u>	Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	iD N	umber	Analyzed	Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-092311-S	EM	802147	0.0880	910	ND	0.0048	BAS	BAS
3W-092311-E	EM	802148	0.0880	910	ND	0.0048	BAS	BAS
3W-092311-N	EM	802149	0.0880	908	ND	0.0048	BAS	BAS
3W-092311-W	EM	802150	0.0880	908	ND	0.0048	BAS	BAS
3W-092611-E	EM	802151	0.0880	959	ND	0.004 6	BAS	BAS
3W-092611-S	EM	802152	0.0880	952	ND	0.0046	BAS	BAS
3W-092611-N	EM	80 21 5 3	0.0880	955	ND	0.0046	BAS	BAS
3W-092611-W	EM	802154	0.0880	955	ND	0.0046	BAS	BAS
3W-092611-EZS	EM	802155	0.0990	8 2 4	1	0.0047	0.0047	10.1
3W-092611-EZN	EM	80 21 5 6	0.0990	8 3 4	ND	0.0047	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity Average Grid Opening in mm² = 0.011 Effective Filter Area = 385 sq mm

Obgrafy signed by Gina Gina Vettraino Date: 2011 09 29 11:03.40 - 06:00*

DATA QA

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101898-0; TDH: #30-0015

TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number:

RES 221469-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

3rd West Sub - Rocky Mtn. Power

Date Samples Received:

September 28, 2011

Analysis Type:

TEM, AHERA

Tumaround:

24 Hour

Date Samples Analyzed:

September 28, 2011 - Sep

Client ID Number	Lab ID N	umber	Asbestos Mineral					Structures >5 Microns	**Excluded Structures	Asbestos Structures
			-		Asbestos Structure Types*			in Length		for
•				Fibers	Bundles	Clusters	Matrices			Concentration
3W-092311-S	EM	802147	ND	0	. 0	0	0	0	0	0
3W-092311-E	EM	802148	ND	0	0	0	0	0	0	. 0
3W-092311-N	EM	802149	ND	0	0	Õ	0	0	0	0
3W-092311-W	EM	802150	ND	0	. 0	0	0	0	0	0
3W-092611-E	EM	802151	ND	. 0	0	0	.0	0	0	0
3W-092611-S	EM	802152	ND	. 0	0	0	0	0	0	0
3W-092611-N	EM	80 2 15 3	ND	0	. 0	0	. 0	0	Ö	0
3W-092611-W	EM	802154	ND	0	0	. 0	0	0	0	0
3W-092611-EZS	EM	802155	Chrysotile	0	0	0	1	0	0	1
3W-092611-EZN	EM	80 2156	ND	0	0	0	. 0	. 0	0	0

^{*}See Analytical Procedure for definitions

^{**}C = Excluded from total due to lack of confirmation

^{**}L = Excluded from total for length less than 0.5 micron (AHERA only)

^{**}A = Excluded from total due to incorrect aspect ratio

ND = None Detected

Reservoirs Environmental, Inc.

RES 221469

	5801 Logan St. Derivor, C Pager : 303-609			303 96	4-1988 -	Fex 300	3-477-42	75 • Tal	i Free :6	966 Res i-EN	,					į.	-
	INVOICE TO: (IF			NT)							CON	TACT	INFO	RMATION		24	
company: R&R Environmental	Company:			,	ļ	Contact:	Dur	e R	x 60	llev				tect.			
Address: 47 W, 9000 S	Address:					hone				××-/			Pho	08:		•	
Sandy, Ut. 84070					- 1	8)C							Fax	:			
	<u> </u>				(Cell/page	r. 80	54	1-10	35			Cat	/peger			
Project Osscription/Location: 2 72 11/95 Suin - Docks AAL Document						4	te Celiva										
5- West 705- Jesus 15-thi Feet	er-					<u>C</u>	WC (77 4	Pmv'	iro.co.	4						
ASBESTOS LABORATORY HOURS: Weekdays: 7am - Tpm					REQ	UEST	ED A	NALY	SIS			V	ALID	MATRIX	CODES	LAF	NOTES:
PLM / PCM / TER RUSH (Same Day) AC PRIORITY (Next Day)STANDARD											Al	r=A		Bulk = B	\Box	
(Ruah PCM = 2hr, TEM = 6hr.)					1						L	Du	8 = D		Paint = P		
CHEMISTRY LABORATORY HOURS: Weekdays: Sam - Spm	····	Į] []				-		ii = 8		Wipe = W		
Metal(s) Dust RUSH 24 hr 3-5 Day	**Prier notification is		Quant			1		اءا			Ĺ		b = \$V		F ≃ Food		
RCRA 6 / Matala & Welding RUSH S day10 day	required for RUSH	통	ઢુ			·		Sage.		ي ق	<u> P</u>	rinking \			e Water = WV	<u>/</u>	
Organics 24 hr 3 day S Day	tumarounds.**	Point Count	, + /. Preps		19	2		逼		antificati	 	₩ASTM		O = Other	e media only**		
MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - 9pm	1		ISO,		1 1			ð	Ş	호 _ 를 X	 -	A31 W	01/92	approved wit	o media drily	+	
E.coll O167:H7, Collfonns, S.aureus 24 hr 2 Day	3-8 Day		7402. SO-Indir	≤				8								<u> </u>	
Salmonella, Listeria, Ecoli, APC, Y & M 48 Hr3-5 Day		8	\$ 00	SHA F	وًا إِنَّ	2		7	E E	Quantification	'	ł					
MoldRUSH24 Hr	48 Hr3 Day5 Day	Eg.	ac ac	7400B, OS	(6)		#	当	P 0			İ					
**TurnarQund times establish a laboratory priority, subject to laboratory volume and ar	a not guaranteed. Additional fees	절	를 를		1	E	≯ Ë	- 181		기위	وا	2				<u> </u>	
apply for afteriseurs, weekends and holidays.**		Short report,	AHERA. Want, Mic	7400A,	. ₹ c	§ ₹	157:	幸喜	‡ igi	" ↑ * 3	1 5		2 2				
Special Instructions:		र्ड	1 日本	7400A.	METALS - Analyte(s)	ORGANICS - METH	Salmonella: +/- E.coli O157:H7:	Listeria: +/- Aerobic Plate (Coliforns:	Seureus: +t. or Quantification Y& M: +t. or Quantification Moti: +t., Identification, Quantification MPLEK'S INITIALS OR OTHER NOTES	١	(L) / Area	Matrix Code # Containers	, Data	Ti	EM Nun	nber (Laboraiory
		7.	囊星	PCM	Į į	3	S L	3 2		8 8 E	1 8	3 4	활동	Date Collected	Time Collected	i u	les Onty)
Cilent sample ID number (Sample ID's must be unique)		4		8 2	35 6	15		MICRO	BIOLO	3y 35	- 8	3골	≱ #	· · · · · · · · · · · · · · · · · · ·	hitfnan a/p	1	
1 3W-092311-5			X		1			$\perp \perp$			19	10 /	4	9/23/4		180	2147
2 341-092311 - E					1						191	0					48
3 3W-09234 · N								\Box			9	08					49
4 3W-092311 - W											91				1.		50
5 3W-092611 - E												50		9/24/1	1		51
6 3W-092611 - S								-11	11			52		1139			52
7 3W-092611-M (Exclusion Zone East)					1					11		55			 		53
8 3W-0926U-W		\top			T .			77	\prod		73		1			1	3/
8 3W-09264 - EZS (Exclusion Zone South)			\Box		—			$\top \top$	11	111		24				1	55
10 3W 092611 - EZN (Exclusion Zone Morth)			1		1		11	\top				34			- 	1	SU
Number of samples received: (Addition	nal samples shall be listed on a	attach	ed lon	g form	.)									Y	 	ــــــــــــــــــــــــــــــــــــــ	
NOTE: REI will analyze incoming samples based upon information received and will not be re analysis as indicated on this Chein of Custody shall constitute an analytical services agreeme	eponeble for enors or omissions in ca nt with psymem lenns of NET 30 days	ie satio i, faiture	na reeul	ting Irom ply with	ille inec payment	curacy (of engine nay result	i date 8	y algning % month	cilenticompa	ny rapresa champa.	intaltvo a	grees th	el aubreission	ot the fellowing s	amples for requ	meted
	ed-Ex				ime:	$\overline{}$				·				alst	On los	Onele i	2
									7			- '	le Con . (F°)			Sealed Yes / No	/m// No
	Time: 9.25.51				Carri		-01	<u>U</u> 9	<u>U</u>			<u> </u>					
Contact TAC Properties Pax Date	29 (1 Time 9:00 A Initia	_	Con				Phone				Dat				me	Initials	
Contact Phone Email Fax Date	Time Initia	118 /	Con	TACT			Phone	Email	Fax		Dat	te		Ti	m e	initials	3

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

A = Amosite	F = Fiber
An = Anthophyllite	B = Bundle
C = Chrysotile	C = Cluster
Cr = Crocidolite	M = Matrix
T = Tremolite	

ND = no structures detected

= other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron

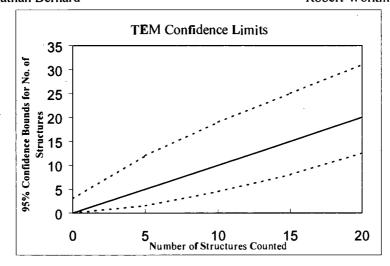
1.80 length units = 0.5 micron

18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc.
TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N(S)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

IENI ASDESIUS SU	OCIDIO CODIII
Client :	R4 R
Sample Type (A=Air, D=Oust):	A
Air votume (L) or dust area (cm2)	910
Date received by lab	9-28-11
Lab Job Number	221469
Lab Sample Number	802147

1+1+
9-28-11
D
Ahera
Month Analyzed
Data Analyzed

F-Factor Calculation (Indirect Pre	eps Only):
Fraction of primary Itilsr used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure	No. of St	ructures	Olmer	nsions	Mentifieation	on Mineral Class				1 = yes, blank = no		
		Туре	Primaiy	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H5<3	ND									·			
	65-6	MD					,							
	65-3	ND		Pres	A:	90%	intact	- 54	Lek	کیرد				
	F5-6	NO		Cied			e A							
B	E5-6	MD		7.			V -							
	ES-3	M												
	(56	ΔM			:	0								
	<i>CS-3</i>	(VO												
		•												

Rsservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX NS
Vottage (KV)	100 KV
Magnification	ZOKX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client:	R+R
Samole Type (A=Air, D≖Dust):	A
Air votume (L) or dust area (cm2)	910
Date received by lab	9-28-11
Lab Job Number:	221469
Lab Sample Number:	802148

F-Factor Calculation (Indirect P	reps Only):
Fraction of primary litter used	·
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	ì

Analyzed by	AH
Analysis date	9-28-11
Method (O=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Ahora
Grid storage location	Month Analyzed
Scope Alignment	Oata Analyzed

Grid	Grid Opening	Structure Type	No. of Structures		Dimensions		Identification	Mineral Class			1 = yes, blank = no			
			Primary	Total	Length	Width	Identification	Amphibole	Ċ	NAM	Sketch/Comments	Sketch	Photo	EDS
A	E3-3	<u> </u>		·										
	C3-6	ND												
	E44	4		Rep	4:9	5 %	ntact	3-5%	del	200				
	E4.1	20		Pier	B1	Re	0A							
B	F4-1	2		,										
	E4-4	ND					Ω							
	E4-1	NA											·	
	C4-4	2												
						10								
						·								

Laboratory name:	REI
Instrument	JEOL 100 CX N/S)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0,011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

Client :	R4R
Sample Type (A=Alr, D=Dust):	A
Air volume (L) or dust area (cm2)	908
Date received by lab	9-28-11
Lab Job Number:	221469
Lab Sample Number:	802149

F-Factor Calculation (Indirect Prep	s Only):
Fraction of pdmery filter used	
7otal Resuspension Volume (mi)	
Volume Applied to secondary litter (ml)	

Analyzed by	AH
Analysis date	9-28-11
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

GiM	Grid Opening	Structure	No. of St	ructures	Dime	nsions	Identification	Mineral Class		····		1 ≖ yes, blank ø		e 110
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	F5-3	MD												
	E5-6	ND					,							
	E5-3	M		7/2	cA:	90	6 inter	x 5%	de	bns				
	(5-6	ΔĎ		Pier	B	75	Lintac	<u>_</u>	de	bas				
B	646	\overline{M}		V		·								
	64-3	ND		,			\mathcal{M}							
	F4-6	W												
	F43	ND												
					,									

Laboratory name:	REI
Instrument	JEOL 100 CX NS
Voltage (KV)	100 KV
Magnification	(20B)(10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 10 =	0.058 um
Primary filter area (mm2)	385
Secondary Filter Area (mrn2)	
QA Type	

R4 R
A
908
9-28-11
221469
802150

F-Factor Calculation (Indirect Preps Only):				
Frection of ptimery filter used				
Total Resuspension Volume (mi)				
Volume Applied to secondary lifter (ml)				

Analyzed by	AH
Analysie date	9-28-11
Method (D=Direct, l=Intlirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	mctures	Dimer	Dimensions		Mineral Class		-		1 = y	es, blank	= no
		Type	Primary	Total	Length	WMth	Identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	F3-6	MD												
	F3:3	ND				,								
	E3-6	21		P	A: 9	5%	intact	5/4	leb	cs.		,		
	E3-3	2		Pien	Br	Piec		,						
B	636	ΔĎ												
	63,3	20												
	F3-6	ND												
	F3-3	$\Delta \Omega$				X								
										,				

Laboratory name:	REI
Instranent	JEOL 100 CX N(S)
Vottage (KV)	100 KV
Magnification	ZOBX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	365
Secondary Filler Area (mm2)	
QA Type	

Client:	R4R
Samole Type (A=Air, D=Dust):	A
Air votume (L) or dust area (cm2)	959
Date received by lab	9-28-11
Lab Job Numben	221469
Lab Sample Number	802151

F-Factor Calculation (Indirect Preps Only):						
Fraction of primary filter used						
Total Resuspension Volume (mi)						
Volume Applied to accondary filter (m0)						

Analyzed by	AIT
Analysie date	9-28-11
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Ahora
Grid siorage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grkt Opening	Structure	No. of St	ructures	Dimer	nsions	Mentification	Mineral Class		-		1 = y	es, blank	= no
		Туре	Primary	Total	Length	WMth		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	E3-3	ND									,			
	(36	ΔV			,									
	B3-6	ND		Pier	A: -	109	intact	5% de	bas					
	B3-3	N_{Δ}		Pier	B:	80%	intact	-4	lebo	S	·			
3	E4-3	MD					·							
	(4-6	M						-						
	C4-3	M					1							
	B4-6	NO												

Laboratory name:	REI
Instrument	JEOL 100 CX NES
Voltage (KV)	100 KV
hlegnification	(20KX 10KX
Grid opening area (mri2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

R4R
A
952
9-28-11
221469
802152

Fraction of primary filler used	
Total Resuspension Votume (mi)	
Volume Applied to secondary filter	

Analyzed by	AH
Analysis date	9-78-11
Ntethod (D=Direct, l=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Grid Opening Str.		No. of St	. of Structures Dimensions		Identification Mineral Class					1 = yes, blank = no		= no	
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H5-4	MD												
	Hs-1	MA												
	65-4	ND		Prec	A> 9	15%	inta	x 5%	de	bas				
	65-	ND			B :	608	intac	t 5%	de	625				
B	H5.6	NA												
,	H5/3	MD					7							
<u> </u>	E5-3	Λ												
	(5-6	M												
		<i>(</i>				\bigvee								

Laboratory name:	REI
Instrument	JEOL 100 CX N/S)
Voltage (KV)	100 KV
Magnification	(2010X 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R4R
Samole Type (A=Air, D≖Dust):	A
Air yolume (L) or dust area (cm2)	955
Date received by leb	9-28-11
Lab Job Number:	221469
Lab Sample Number:	802153

Analyzed by	
Analysis date	
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Ahora
Grid storage location	Month Analyzad
Scope Alignment	Date Analyzed

F-Faetor Calculation (indirect Preps Only):						
Fraction of pdonary filter used						
Totel Resuspension Volume (ml)						
Volume Applied to secondary filter (ml)						

Grid	Grid Opening	Grid Opening Structure No. of Structures Dim		Dime	nsions	ons Identification Mineral Class		ral Class			1 = yes, blank = no			
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	ED\$
A	F3-3	$N\Delta$												
	E36	NO												
	E3-3	M		Pe	A.	90	gun to	ce 5%	Le	65				
	C3-6	M		Pies	BA	, r,	A							
B	E6-1	ND					·				·	·		
	C6-4	ND						K						
	(le-1	2					/	7						
	Ble-4	Δ					1	/						

Laboratory name:	REI
Instrimtent	JEOL 100 CX NS
Voltage (KV)	100 KV
Magnification	20BX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filler Area (mm2)	
QA Туре	

C0ent :	R4R
Samole Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	955
Date received by lab	9-28-11
Lab Jab Number:	221469
Lab Sample Number:	802154

F-Factor Calculation (Indirect Preps Only):					
Fraction of primary filter used					
Total Resuspension Volume (ml)					
Volume Applied to secondary filter (m0					

Analyzed by	13
Analysie date	9/29/11
Method (D=Direct, i=Indirect, IA=Indirect, ashed)	1/ /
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	GrM Opening	Structure	No. of St	ructures	Dimer	nsiens	Mentification	Mineral Class				1 = yes, blank = no		= no
		Type	Primary	Toiel	Length	WMth		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	45-4	M												
	65-4	$\Delta A $												
	F5-4	W)				Park	A 60	Lintant	5-7	ho	debws			
	E5-4	W				Ind	15 60	howker	A 5	70%	debys			
3	64-3	M)						19	1	en/i				
	F4-3	ND							77	7				
	E4-3	<i>w</i> >												
	F5-3	ND												
	<u> </u> '													

Laboratory name:	REt
Instrument	JEOL 100 CX NS
Voltage (KV)	100 KV
Magnification	COBOK 10KX
Grid opening area (mm2)	0.D11
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filler area (mm2)	385
Secondary Filter Araa (mm2)	
QA Type	

Client :	R4R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	824
Date received by lab	9-28-11
Lab Job Number	221469
Lab Sample Number:	802155

F-Factor Calculation (Indirect Preps O	
Fraction of primary filter used	
Total Resuspension Volume (mi)	
Volume Applied to secondary fitter	

Analyzed by	
Analysis date	
Method (D=Oirect, l=indirect,	
IA=Indirect, ashed)	D
Counting miles	41
(ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Dale Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Dime	nsions	identification	Identification Mineral Class				1 = yes, blank = no		= no
<u> </u>	Ora Opening	Туре	Primary	Total	Length	Width	TOO TO TOO TO	Amphibote	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	F4-4	NO												
	E4-4	W				:	<u> </u>							
	C4-4	W)			L	MD.	A 6	Olanva	hF.	5-7	Lo debris	.		
	E3-4	W			P	10/	b ~)	K	9/	29/1	·			
	C3-4	ND				1			7	7				
B	E3-3	M			12	10	CD.	,	V					
<u> </u>	13-3	W		•						Ç				
	B3-3	W									·			
	C3-1	W												
-														

Laboratory name:	REI
Instrument	JEOL 100 CX N/S
Voltage (KV)	100 KV
Magnification	2010X 1010X
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filler area (mm2)	385
Secondary Filter Area (mrn2)	·
QA Type	

Client :	R4 R
Samole Type (A⊭Air, 0=Dusn:	A
Air volume (L) or dust area (cm2)	834
Dale received by lab	9-28-11
Lab Job Number:	221469
Lab Sample Number:	802156

Analyzed by	
Analyste date	
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting mies (ISO, AHERA, ASTM)	Ahera
Grid storage iocation	Month Analyzed
Scope Afgnment	Date Analyzed

F-Factor Calcutation (Indirect Pr	eps Only):
Fraction of primary filter used	
Total Resuspension Voluma (mi)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening Structure No. of Structures		mctures	Dimensions Identificat		Identification	tification Mineral Class				1 = yes, blenk = no			
J		Туре	Primary	Totai	Length	WMth		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EOS
A	F3-60	M												
	636	W)		_										
	F5-6	W				2	o A	50 min	Im	3.	5% de	11		
	E5-6	$\Lambda \Lambda O$				Pm	13	60 %	nn	+ 3	-50/0 des	n's		
	US-60	WS				Y			1	9	V /			
1/2	F4-1	w						,		7	1			
	E4-1	W)												
	4-1	M												
	E4-6	M												

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be tenninated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{i}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{1000cc}$

Filter loading, $s/mm^2 = \frac{\# Asbestos structures}{Area Analyzed (mm^2)}$

GO = TEM grid opening



September 30, 2011

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 221575-1 None Given

Project Description:

None Given

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 221575-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 221575-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given **Client Project Description:**

None Given

Date Samples Received:

September 29, 2011

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

September 29, 2011 - September 30, 2011

Client ID Number	Lab ID N			Area Air Analyzed Volume Sampled		Analytical Sensitivity	Asbestos Concentration	Filter Loading	
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)	
3W-92711-E	EM	80 2 8 3 8	0.0880	1102	ND	0.0040	BAS	BAS	
3W-92711-S	EM	80 2 8 39	0.0770	10 9 6	ND	0.0046	BAS	BAS	
3W-92711-N	EM	80 2 840	0.0770	10 9 8	ND	0.0046	BAS	BAS	
3W-92711-W	EM	802841	0.0770	10 9 6	ND	0.0046	B AS	BAS	
3W-92711-EZS	EM	802842	0.0880	931	ND	0.0047	BAS	BAS	
3W-92711-EZE	EM	802843	0.0880	969	ND	0.0045	BAS	BAS	

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity

Effective Filter Area = 385 sq mm

Average Grid Opening in mm² = 0.011

DATA QA

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number:

RES 221575-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

None Given

Date Samples Received:

September 29, 2011

Analysis Type:

TEM, AHERA

Tumaround:

24 Hour

Date Samples Analyzed:

September 29, 2011 - Sep

Client ID Number	Lab ID Number		Asbestos Mineral	Asl	pestos Str	ucture Typ	es*	Structures >5 Microns in Length	**Excluded Structures	Asbestos Structures for
			-	Fibers	Bundles	Clusters	Matrices	•		Concentration
3W-92711-E	. EM	802838	ND	0	0	0	0	0	0	0
3W-92711-S	EM	80 2 8 39	ND	.0	0	0	0	0	0	0
3W-92711-N	EM	802840	ND	0	0	0	. 0	0	0	0
3W-92711-W	EM	80 2 841	ND	0	0	. 0	0	. 0	1**NAM	0
3W-92711-EZS	EM	802842	ND	0	0	0	0	0	0	0
3W-92711-EZE	EM	802843	ND	0	0	0	0	0	. 0	0

^{*}See Analytical Procedure for definitions

ND = None Detected

^{**}C = Excluded from total due to lack of confirmation

^{**}L = Excluded from total for length less than 0.5 micron (AHERA only)

^{**}A = Excluded from total due to incorrect aspect ratio

^{**}NAM = None Asbestos Material

Time

Oatw

Contact

Reservoirs Environmental, inc. 5801 Logen St. Denver, OO 80216 • Ph: 303 984-1989 • Fex 303-477-4275 • Tdil Free :888 REB|-ENV

Pager: 303-509-2099 **CONTACT INFORMATION:** INVOICE TO: (IF DIFFERENT) Company: Address: 47 W.9800 S. Sardy Ut. 84070 Cell/pager: 801 SUL-1035 Fingl Date Oelivsre Ue Email Activess: Celäpege Projed Number and/ar P.O. #: dave @ rrenivo.com Preject Otracription/Localion: ASBESTOS LABORATORY HOURS: Weekdays: 7am - Tpm REQUESTED ANALYSIS VAUD MATROCCOOES LAB NOTES RUSH (Same Day) Y PRIORITY (Next Day) __STANDARD Air = A Bulk = 8 (Ruch PCM = 2hr, TEM = 6hr.) Paint = P Dust = 0 CHEMISTRY LABORATORY HOURS: Weekdays: 8am - Spm Soil = S Wpe * W Metal(s) / Oust RUSH 24 hr. 3-5 Day Swab = 5W F = Food "Prior notilization lo Drinking Water = DW Waste Weter = WW RCRA 8 / Metals A Welding Point Count RUSH ___ 5 day ___ 10 day radulrad for RUSH Furne Sean / TCLP EM - AHERA, Level II, 7402, ISO, +/-, emi-quant, Micro-vac, ISO-Indirect Preps O = Ofber tumerounds.** Organics 24 hr. ___ 3 day ___ 5 Day **ASTM E i l'e2 approvod vilpe modia only** MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - 6pm METALS - Analyte(s) RCRA 8, TCLP, Welding Furne, E.coll O167:H7, Coliforms, S.aureus ___ 24 hr ___ 2 Day CM - 7400A, 7400B, OSHA Salmonella, Listeria, E.coll, APC, Y & M 48 Hr. ___3-5 Day **JUST** - Total, Respirable Mold RUSH __ 24 Hr_ "Tummound times establish a laboratory priority, subject to laboratory volume and are not guaranteed. Additional reso Sample Volume apply for efferhours, weekends and holidays." Matrix Code Special Instructiona: EM Number (Laboratory Time Date Use Only) Collected Collected Client sample ID number (Sample ID's must be unique) MICROBIOLOGY hh/mm a/o 802838 Ł NOZ IOA! org 40 41 ,096 -FZS 42 43 8 10 Number of samples received: (Additional samples shall be listed on attached long [brm.) NOTE: REJ will energie incoming samples based and interest in particulation received end will not be responsible for errors or ornisations in calculations resulting from the inaccuracy of original data. By signing client/company representative agrees that submission of the following samples for requested enelyele Se indicated on this Chain of Custody ghalf contribute an enelytical services egreement with psyment terms of NET 30 days, failure to comply with payment terms may result in a 1.5% monthly interest surcharge. Relinquished By: Sample Condition: Sealed Intact Laboratory Use Only Yes / No Yes NHo Yes / No Temp. (P') Received By: Date/Time: Results: Contact Phone Email 4 80x Data Time Initials Contact Phone Email Fax Date Time initials

Initials

Contact

Phone Email Fax

TRK#-7952 3500

Phone Email Fax

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

A = Amosite	F = Fiber	
An = Anthophyllite	B = Bundle	;
C = Chrysotile	C = Cluster	•
Cr = Crocidolite	M = Matrix	
T = Tremolite		

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron

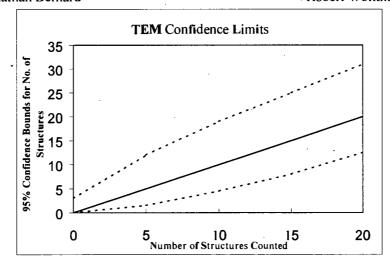
1.80 length units = 0.5 micron

18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	, REI
Instrument	JEOL 100 N (S)
Voltage (KV)	100 KV
Magnification	EORX 10KX
Grid opening area (mm2)	0.011
Scale: 1L=	0.28 um
Scale: 1D =	0.05S um
Primary litter area (mm2)	385
Secondary Filter Area (mm2)	·
QA Type	

Client:	R+R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	1102
Date received by lab	9-29-11
Lais Job Number	221575
Lab Sample Number	802838

Lab Sample Number	1 8028 38
F-Factor Calculation (Indirect I	Preps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	AH
Analysis date	9-29-11
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid siorage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Grid Opening Structure		No. of Str	ructures	Dime	nsions	Identification	Mineral Class				1 = y	es, blank	= no
·	Ond Opening	Туре	Primary	Total	Length	WM th	·	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	F3-4	M												
	F3-1	ND												
	E3-4	DÝ		Ac	A:	90%	intad	5-7	4	de 6	2 (
	E3-	(NO)		Pier	3-	J. Pre	A			i L			·	·
B	631	M				,	,							
	F3-4	M					57							-
	F3-1	M			·									
	E3-4	8			,	X								
)							

Laboratory name:	REI
instrument	JEOL 100 N (S)
Voltage (KV)	100 KV
Magnification	ØRX 10KX
Grid opening area (mm2)	0.011
Scate: IL ≃	0,28 um
Scale: 1D =	0.0% um
Primary filter area (mm2)	385
Secondary Fitter Area (mm2)	
QA Type	

Client:	R+R
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	1096
Date received by lab	9-29-11
Lab Job Number:	221575
Lab Sample Number:	802839

F-Factor Calculation (Indirect Preps Only):					
Fraction of primary filter used					
Total Resuspension Volume (mi)					
Volume Applied to secondary filter (ml)					

Analyzed by	T/S.
Analysis date	1/30/n
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	5
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scooe Alignment	Date Analyzed

Grkl	Grid Opening	Structure	No. of St	ructures	Dimer	nsions	identification	Mineral Class			1 = y	es, blank	= no	
O.N.	One Opening	Туре	Primary	Total	Length	WMth		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K4-4	MD						,						
	14-4	W	4.8		1	no 1	uB	~80%.	hand	, 	5-7%	bris		·
	644	W)				,	1B 91	36/4						
	F4-6	M					// '/	7						
B	F4-4	AV.												
	E4-4	M												
	C4-4	w												
	,													
											·			

Laboratory name:	REI
Instmment	JEOL 100 N (S)
Voltage (KV)	100 KV
Magnification	ØKX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	. 0,28 um
Scale: 1D =	0.056 um
Primary filter araa (mm2)	385
Secondary Filter Area (mm2)	
QA Tyua	

R+R
A
1098
9-29-11
221575
802840

Lab Job Number:	EE13 T3					
Lab Sample Number:	802840					
F-Factor Calculation (Indirect Pr	reps Only):					
Fraction of printery filter used						
Total Resuspension Volume (ml)						
Volume Applied to secondary filter (ml)						

Analyzed by	JB
Analysis date	7/30/4
Method (O=Direct, I=Indirect, IA=Indirect, ashed)	
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Grid Opening		Grid Opening	Structure	No. of Str	uctures	Dime	nsions	Mentification	Mineral Class				1 = yes, blank = no		
		Туре	Primary	Tgtal	Length	Width		Amphibole	c	NAM	Sketch/Comments	Sketch	Photo	EOS		
A	614-3	NO	1.00					·								
	F4-3	Δ	4 101/12	•												
	E4-3	W)				mp5	ArB	~ 80 h "	Low	6	5-7% de	by's				
	4-3	W			<u> </u>	1			15	1/20	(,					
1	K4-3	W)		·												
	H4-3	,w)						-								
	64-3	W)	kerre.					-								
,																

Rev 3-2009

Laboratory name:	REI
Instrument	JEOL 100 N (S)
Voltage (KV)	100 KV
Magnification	(EORX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scate: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	<u>`</u>
QA Tyoe	

Client :	R+R
Sample Tyoe (A=Air, D=Dust):	A
Sample Tyoe (A=Air, D=Dust): Air volume (L) or dust area (cm2)	1096
Date received by lab	9-29-11
Lab Job Number:	221575
Lab Samole Number:	802841

F-Factor Calculation (Indirect Preps Only):					
Fraeriac of primary filter used					
Total Resuspension Volume (mi)					
Volume Applied to secondary litter (nil)					

Analyzed by	Jh
Analysis date	9/30/11
Method (D=Direct, i=Indirect, IA=Indirect, ashed)	1.2
Counting mies (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dimer	Dimensions Identification		Mineral Class			1 = yes, blank = no		= no	
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	FULL	M)			Δ						·			
	EU-4				Kn		60	he won	+	5-7	In de br	S		
	614-6	W)	V		Pn	01	50	Low hom		5-7	7 7			
	F4-6	S						4	20/2	/				
B	F4-1	W							1	/			·	
	E4-4	F		0	15	12	DΧ			/	Ca hìg K phu	h Kasacia		
	F4-6	M	1.24											
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² age	ŀ	UI	

Laboratory name:	REI
Instrument	JEOL 100 N (S)
Voltage (KV)	100 KV
Magnification	20RX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

TENTIODESCOS CARGOSTO COUNT					
Cllent:	R+R				
Sample Type (A=Alr, D=Dust):	A				
Sample Type (A=Alr, D=Dust): Air volume (L) or dust area (cm2)	931				
Date received by lab	9-29-11				
Lab Job Number:	221575				
Lab Sample Number:	802842				

Lad Sample Number.	1 8058 1-							
F-Factor Calculation (Indirect Preps Only):								
Fraction of primary tilter used								
Total Resuspension Volume (ml)								
Volume Applied to secondary filter								

Analyzed by	JB
Analysis date	9/30/0
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	5'
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scooe Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	mctures	Dime	nsions	identification	Mineral Class				1 = y	es, blank	= no
		Туре	Primaty	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H4-1	w)									,			
	64-1	$\Delta N $	4.33			$\frac{1}{2}$	A	O hoin to	ant	:	B-5/2 d	المطع	5	
	FU-1	M				Jus .	15 8	o Le in	mt		2 01 1	bure		
	£4-6	W)			7					1	8 7/30/11		·	
B	45-1	W									77			
	1-15-1	3						·						
	(915-1	M												
	F6-4	W												

Rev 3-2009

Laboratory name:	REI
Instrument	JEOL 100 N (S)
Voltage (KV)	100 KV
Magnification	EORX 10KX
Grid opening area (mm2)	0.011
Scale: IL=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	R+R
 Sample Type (A=Air, D=Dusi):	A
Air volume (L) or dust area (cm2)	969
Date received by lab	9-29-11
Lab Job Number:	221575
Lab Sample Number:	802843

Analyzed by	J16
Analysis date	9/30/11
Method (D=Direct, l=Indirect, iA=Indirect, ashed)	1"5
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):								
Fraction of primary filter used								
Total Resuspension Volume (ml)								
Volume Applied to secondary filter	 							

Grid	Grid Opening	Structure	No. of St	ructures	Dime	nsions	Identification	Mineral Class				1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EOS
A	H5-1	W)					,							
	615-1	W				ms	Ag	10 9 s for	- 3	-54	b. lebics			
	F5-1	M			6	22	1	00 % 1 W fu	cf 2	3-5	n delas			
	E5-1	NO			V	1	1	9/30/11					·	·
13	636	W)					7	7 7	·					
	H3-6	M												
	E3-6	W)										·		
	F3-4	W		·								·		

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\# \text{ Asbestos Structures}}{\# \text{ GO Counted}} \times \frac{i}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{\text{IL}}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening

Due Date: 10.4 Due Time: ____930-

REILAE RESELVOITS Environmental, Inc., 8801 Logan St. Denver, CO 80216 · Ph: 303 864-1986 · Fax 303-477-4278 · Toli Free :866 RE61-ENV

Pager : 303-809-2088

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E.coll 015	7:H7, Coufbrms,	S.aureus	24 h	ır2 Day	/3-5 Day		Long report,	7402, 30-Ind	₹		e e			8	E.coft +/- or Quantification	看看	Quantification	5 E			ļ	1			•		
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Mold			RUS	3H24 Hr_	48 Hr3 C	ay_6 Day		Level II. D-vac, IS	8	Respirable	S 2	-	*	1	3 8		3	SIS	1			- 1		1		L	
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		apply for arte	ritours, weekenda	and nondays.			Short report,	AHERA, uant, Mic	- 7400A, 7400B, OSHA	Total	₹뒫│	SANICS - METH	E coli O157.H7:	Aerobic Plate Count.	* *	Coliforms: +f- S.aureus: +f-	\$	÷ 5	₽	_	8	8		- 1		Í	
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Clions		<u> </u>	(O1101-		<u> </u>		- ≥	Semi	5	PUST	METALS - Analyte(s) RCRA 8, TCLP, Welding Fume,	ORGANICS - METH					<u> </u>		Sample Volume	3	Matrix Code	# Containers	Collec		Collected		use omy)
	mple ID numb -928/1-6	Der	(Sample ID's	must be uniqu	ue)		- - 	₩ <i>\$</i>	1	-	Ξ α	0	──	T	T T	LOGY	\Box	- 65	747		À		1281		hh/mm a/p	87	4177
	92811-5						-	广	+-+	\dashv			++	+-	+	-+-	\vdash	+	74	-	7	+	1001	+		100	78
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	-92811-N							$\vdash \vdash$	++				+	+	+		\vdash		79	_	$oldsymbol{arphi}$	_	+			├ ──	79
	-92811-W						-{	┝╌╂╌	+			-+	44	+	\rightarrow		\longrightarrow		797	-	₩	4	<u>*</u>			 	80
	92911-E							-	$\downarrow \rightarrow$				44		\dashv	4	\vdash		92	•	$\downarrow \downarrow$	19	1/24	111		 	8)
8 3W-	92911-5								$\bot \bot$	_			$\bot \downarrow$		\perp		\sqcup		92	3	Ш					<u> </u>	82
7 3W-	92911-N	(Etypeta)	Field B	Slaule					\sqcup				$\perp \perp$		\coprod		Ц					\bot	\perp				8 =
8 3W -	92911-W							di							Ш				921	<u> </u> ,			1			<u> </u>	84
9													TT	1	7 1		П										
10													\top	Т		\Box	П			\top		\neg					
	samples received:			(Addi	Itional samples s	shall be listed o	on attar	ched k	ona lor	nn.)					-11		Щ.									1	
NOTE R	El will analysa incomin	g semples based up	pon intormation recei	tvod and v4li not b	be respons ble for err	rors or omissions in	n calculat	tions res	sulting fr	rom the	maccu	racy of	original	date.	L By at	gning c	ilent/i	сотралу	represent	ative (agree:	a that e	ubmist	sion of th	ne following sa	imples for n	betseuper
analysis :	et indicated on this Cha	ain of pustody shall	constiute an analyd	cal services agree	enient with payment	lamis of NET 80 d	ieys, felk					7	3	in a 1	1.8% n	nonthly	Inter	net surch	arge.	—							
Relingui	shed By:	hite	SK	سينسد	- Feb-E	×			Date	/Time	: 9	29	lu						٤	Samı	ple (Condit	ion:	Or	nice S	Sealed	_ Intact
	ory Use Only	Kai	les		Datemme: /O	-3.//			P=3				o a	<u>じ</u>	7	<u> </u>				Temp	p. (F	ຶ) _		Yer	s/No Y	'es / No	CY® / No
Results:	Contact	Phone	e Email Fax	Date	Time	e ir	nitials	_	ontact			_	hone	Em	all F	ay			Date					Time		initi	lais
L/GSCHI19	Contact	1.10110	O 2010011 1 000					<u> </u>				<u>`</u>	.,			<u></u>											

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

Α	=	Amosite	F =	Fiber •
An	=	Anthophyllite	B =	Bundle
C	=	Chrysotile	C =	Cluster
Cr	=	Crocidolite	M =	Matrix
Т	=	Tremolite		

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

Sizing Conversion

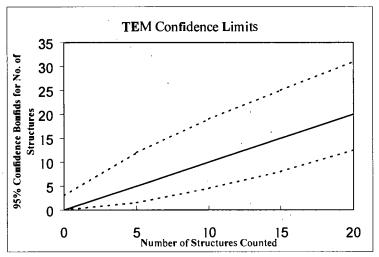
1 length unit = 5 mm on screen = 0.278 micron 1.80 length units = 0.5 micron

18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instruntent	JEOL 100(N) S
Voltage (KV)	100 KV
Magnification	20KX XOKX
Grid opening area (mm2)	0.011
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mrn2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	RAR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	792
Date received by lab	10/3/4
Lab Job Number:	221773
Lab Sample Number:	804177

Analyzed by	J13
Analysis date	10/4/11
Method (D=Dlrect, l=Indirect,	1 14
IA=Indirect, ashed) Counting rules	Λυ.
(ISO, AHERA, ASTM)	<u> </u>
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect P	F-Factor Calculation (Indirect Preps Only):					
Fraction of primary filter used						
Total Resuspension Volume (ml)						
Volume Applied to Secondary filter						

Grid	Grid Opening	Structure	No. of Str	ructures	Dime	nsions	Identification	Mineral Class				1 = yes, blank = no		
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H3-6	ND						_						
	63-6	<i>M</i>)			f	NID	A	70 Limb	126	3.	5% debi	بأفح		
	F3-6	W)			0	40	MaA							
	E3-6	W)				1	13	10/Hu						
	C3-6	W						/1/3						
1	K3-6	W		<u> </u>										
	H3-6	W												
	613-6	_W>_										_		
	F3-6	W)_												
		•												

Page	1	of	

Laboratory name:	REI
Instrument	JEOL 100(N) S
Voltage (KV)	100 KV
Magnification	ZOKO JOKX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	RAR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	792
Date received by lab	10/3/4
Lab Job Number:	221773
Lab Sample Number:	804178

		raction of primary filter used
Totel Resuspension Volume (ml)	•	otel Resuspension Volume (mi

Analyzed by	113
Analysis date	10/4/11
Method (D=Otrect, i=Indirect, IA=Indirect, ashed)	0
Counting rules (ISO, AHERA, ASTM)	Alt
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	ructures	Dime	nsions	Identification	Mineral Class			·	1 = y	es, btank	= no
		Туре	Primary	Total	Length	Wklth		_Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K4-1	ND												
	144-1	ND			P		90	hertunt	7-	10%	abbriz			
	614-1	ND			2	1B	90.	he inten	6.7-					
	FEI-1	ND				<i>V</i> .		1	B		4/4			
	E4-1	ND						1		1	7			
3	65-1	W						/						
	F5-1	w									·			
	E5-1	W												
	C5-1	M)												
		·						·		·				

Laboratory name:	REI
Instmment	JEOL 100(N) S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: IL=	0.28 um
Scale: ID =	0.056 um
Primary filter area (nnm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	RAR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	792
Date received by lab	10/3/4
Lab Job Number:	221773
Lab Sample Number:	804179

Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filler	

Analyzed by	J13
Anslysis date	10/4/11
Melhod (D=Direct, l=Indirect, IA=Indirect ashed)	0
Counting rules (ISO, AHERA, ASTM)	Alt
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	uctures	Dime	nsions	Identification	Mineral Class				1 = y	es, tylank	=. no
		Туре	Primary	Total	Length	Width		Amphibote	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	64-1	ND	200					·						
	F4-1	_												
	E4-1	M		L	Pmo	A	90%	what	3	-70	lo de hors			
	C4-1	(کس.			Pard	6	50%	en hut	13-	7	10 6hus			
	B4-1	W			T			A	8.1	10/4	(
	Va15-6	ND						/1		77				
	Ca5-3	W												
	F5-6	W												
	F5-3	W								<u> </u>				

Rev 3-2009

Laboratory name:	REI
Instrument	JEOL 100 (N) S
Voltage (KV)	100 KV
Magnification	20kg 10kx
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.0\$6 um
Primary filter area (mm2)	385
Secondary Fifter Area (mm2)	
QA Type	

I FIM Yangataa ati	COUNTY C	ougt .			
Client :	Pa	12			
Sample Type (A=Air, D=Dust):		7			
Air volume (L) or dust area (cm2)	7	92			
Date received by lab	10/3	u			
Lab Job Number:	22	1773			
Lab Sample Number:	804180				

Lab Sample Number.	80-180
F-Factor Calculation (Indirect Pre	ps Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (mi)	

Analyzed by	ST
Analysis date	101411
Method (D=Direct, l=Indirect, IA=IndIrect, ashed)	- D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scooe Alignment	Date Analyzed

Grid	d Grid Opening Structure		No. of Structures		Dimensions		Identification	Mineral Class				1 = yes, blank = no		= no
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K4-3	W									·			
	H4-3	<i>W</i>)				1		ſ					·	
	614-3	W			Pno	*	90/	unhut	7	-10 /	(debri)	αħ		
	FU-3	M			Pry	3	100 %	un but 1	7	10:	he debore			
	E4-3	M						1B		10/4/4		,	,	
B	63-3	MO						1	1	17				
	F3-3	11/						7						
	614-1	ND												
ţ.	F4-1	(W)												
			#	(A 7										

Reservoirs Environmental, Inc.

Laboratory name:	REI
Instrument	JEOL 100(N) S
Voltage (KV)	100 KV
Magnification	2010X 10KX
Grid opening araa (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Fitter Area (mm2)	
QA Type	

	X-	ount
f	4	R
	1	7
	72	27
0	3	ıl
	<u>LZ</u>	-1773
	81	يا [8]
	10	Pa (97 10 3 22

F-Factor Calculation (Indiraci Preps Only):								
Fraetian of primary filter used								
Total Resuspension Volume (mi)								
Volume Applied to secondary filter (ml)								

Analyzed by	3115
Analysis date	10/4/1
Method (D=Oirect, I=Indirect, IA=Indirect, ashed)	1 5
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage lecation	Month Analyzed
Scope Alignment	Date Analyzed

Grld	Grid Opening	Structure	No. of St	No. of Structures Dimensions		Identification Mineral Class				1 = yes, b				
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H4-4	ND									· · · · · · · · · · · · · · · · · · ·			
	614-4	ND		!				s.					,	
	F4-4	MO			1	ms /	+4/5	90 humb	mf	, 7	3-5% Ne	625		
	E44	W)				1	ï			10	4/4	y.		:
B	H3-6	ND						78		7	7			
	63-6	W	e to to					,						
	F3-6	M						<u>.</u> ,						
•	575 10 41 a E 3 46	W					•							

Page.	1	of		

Laboratory name:	REI
Instrument	JEOL 100(N) S
Voltage (KV)	100 KV
Magnification	2010x 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary fitter area (mm2)	385
Secondary Fitter Area (mm2)	
QA Type	

TEM Maneatos au	nemb c	ount .
Client ;	Pa	12
Sample Type (A=Air, D=Dust):	1	7
Air volume (L) or dust area (cm2)	9	2.3
Date received by lab	10/3	ıi
Lab Job Numben	2-2	-1773
Lab Sample Number:	81	24/87

Analyzed by	JH
Analysis date	10/4/4
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	D_1
Counting rules (ISO, AHERA, ASTM)	ÁH
Grid storage location	Month Analyzed
Scope Allenment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):					
Fraction of primary filler used					
Total Resumpension Volume (ml)					
Volume Applied to secondary fitter [mi]					

Grid	Grid Opening	Structure	No. of St	ructures	Dime	nsions	Identification	Mineral Class				1 = y	1 = yes, blank = no	
		Туре	Primary	Total	Length	Width	i domano di on	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K4-3	MD												
	H4-3	ND						_						
	6143	ND			Pres	A	6902	o in hu	4	5/2	debns			
	F4-3	\sim					/	1.						•
B	H4-6	Δ					B	10/1/4					·	
	64-6	M						777			-			
	F4-6	W									· · · · · · · · · · · · · · · · · · ·			
	E4-6	W							}					
							·	i						

Rev 8-2009

Resen/oire	Environmental, I	nc
TEM Ashes	tos Structura Co	

Laboratory name:	REI
Instrument	JEOL 100 (N) S
Voltage (KV)	100 KV
Magnification	2019X 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mrn2)	
QA Tyoe	

		ourit .		
K) 4	12		
	[}		
	9	21		
101	3	tl		
	-2	1773		
804184				
	(0)	Pa (- 9: (0 3 2-2		

Fraction of primary filler used Total Resuspension Volume (ml) Volume Applied to secondary filter (ml)

Lab Job Number:	221773								
Lab Sample Number: 804 84									
F-Factor Calculation (Indirect Preps Only):									
Fraction of primary filler used	}								
Total Resuspension Volume (ml)									
Volume Applied to secondary filter	 								

Analyzed by	113
Analysis date	10/4/4
Method (D=Direct, i=Indirect, IA=Indirect, ashed)	1 51
Counting rules (ISO, AHERA, ASTM)	ÁH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Openin	Structure	No. of St	uctures	Dime	nsions	Identilication	Mineral Class				1 = y	es, blenk	= no
		Туре	Primary	Total	Length	WMth		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H5-1	ND							·			-		
	45-1	ND												
	F5-1	M)	10 10 10 10 10 10 10 10 10 10 10 10 10 1		P	10	9B 8	Dhan h	nt		3-5/2 del	2W7		
	E5-1	ΜΛ				V	, 4					007		
	c5-1	W				4	1 Br	10/4/11						
	> F4-6	M				. /	7	[7]						
	E4-10	MS						,						
	(4-6	W												
														

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, $s/cc = \frac{\# \text{ Asbestos Structures}}{\# \text{ GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1}{1000cc}$

Filter loading, $s/mm^2 = \frac{\# \ Asbestos \ structures}{Area \ Analyzed \ (mm^2)}$

GO = TEM grid opening



October 6, 2011

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 221950-1 None Given

Project Description:

Rocky Mtn. Power 3rd

West Sub Station

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 221950-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer Orr

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 221950-1

Client:

R & R Environmental

Client Project Number / P.O.: None Given

Client Project Description:

Rocky Mtn. Power 3rd West Sub Station

Date Samples Received:

October 5, 2011

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

October 5, 2011 - October 6, 2011

Client ID Number	Lab ID Number		r Analyzed Volume		Number of Asbestos Structures Detected	Analytical Sensitivity	Asbestos Concentration	Filter Loading
			(mm²)	· (L)		(s/cc)	(s/cc)	(s/mm²)
3W-93011-E	EM	805791	0.1100	694	ND	0.0050	BAS	BAS
3W-93011-S	EM	80579 2	0.1100	694	ND	0.0050	BAS	BAS
3W-93011-N	EM	80579 3	0.1100	694	ND	0.0050	BAS	BAS
3W-93011-W	EM	805794	0.1100	694	ND.	0.0050	BAS	BAS
3W-100311-S	EM	805795	0.0880	950	ND	0.0046	BAS	BAS
3W-100311-W	EM	805796	0.0880	868	ND	0.0050	BAS	BAS
3W-100311-E	EM	805797	0.0880	9 3 9	ND	0.0047	BAS	BAS
3W-100311-N	EM	805798	0.0880	9 3 9	ND	0.0047	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity Average Grid Opening in mm² = 0.011

Effective Filter Area = 385 sq mm

DATA QA

Due Date: 10 - 6

Seci Logan St. Denver, CO 80216 • Ph; 303 964-1866 • Fak 303-477-4275 • Toll Pres :889 RESI-ENV

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•	ناوب		U	

	Pager: 393-509 INVOICE TO: (IF)		RENT	n							C	ONTA	CTI	NFOF	RMATION:				
Company: 2 & R Entronmental	Company:			:/	Co	ntect:	Jave.	16	·ko	16 .				Cont		tu Kon	A / N.		7
Address: 47 W .90005	Address:				Pin	178:			A.D.C.	ury.				Phone:					一
Sundy, Ut. 84070				,,,,,,	Fe	0	·							Paic					コ
					Oe	l/pager;	801	50	11-1	035				Celly	pager, 801	828-52	19		\Box
Project Number and/or P.O. 0:					F	ad Dem	Delivera	ble En	eli Add	r ne t:				,					٦
Project Description/Location: Locky Mtn. Rouler 3th West Su	b Station															,			╝
ASBESTOS LABORATORY HOURS: Weekdaye: Tam - Tpm					REQU	E8TI	ED AN	IALY	/818				VA	UDI	MATRIX C	ODE8	LAB	NOTES:	
PLM / PCM (TEM)RUSH (Same Day) X PRIORITY (Next Day	STANDARD			\top					П			.,,	Alr	= A		Bulk = 8			\Box
. (Ruah PCM = 2hr, TE销 = 5hr.)		j		-				İ						= D		Paint = P	ļ		
CHEMISTRY LABORATORY HOURS: Weekdays: 8am - 8pm				ŀ								·	Sol			Vipe = W	ļ		_
Matal(s) / Quat RUSH 24 hr3-5 Day	**Priar notification is	Oreant	1	İ				2						= 8W		= Food	<u> </u>		
RCRA 8 / Metals & Welding Fume Sean / TCLP RUSH S day10 day	required for RUSH	E o		İ	§	ĺĺ	-	8			e se se se se se se se se se se se se se	ZMIN	dne W			Water = WW			-1
Organics24 hr3 day6 Day	tumareunds.**	Point Count	1		148		1	擅	1	11	新	•••	OTM 6		0 a Other	media only**	 		-
MICROBIOLOGY LABORATORY HOURS: Weekdays: 9am - Spn	,		ğ		Metals Scen		-	ð		5.	Quantiti ER NO	 		7	- Phiaton wh	- 11-2-0-0-19			
	3-6 Day	Long report.	- He i	s			-	8	a a	Cuantification	. Identification , Quantificati NaTIALS OR OTHER NOTES				1		 		-
Salmonella, Ustarle, e.coli, APC, Y & M48 Hr3-5 Day		5 S		5 8	12	.		‡			₩ £		-						┪
	48 Hr3 Day5 Day				° ₽		\$	별	3	ع ايرار	Mentify TALS C								
"Turaeround times establish a laboratory priority, subject to laboratory volume and a	e not guaranteed. Additional Icos				1 ₹ ₹	E	뷔빌	ုပ္ရွိ	8	٤ ا يا ا	N S	9		Ì	1	!			\Box
apply for ofterhours, weekends and hefdaya.**		Short report,	{ 2 8 ⋅	Total A	188	3	養 6	至	¥ 3	1 10 7	2 100	둟	١,	a 8	}	1			П
Spacial inatruetions:		8 8	Table 1	₹ ₽	METALS - Analyte(s) RCRA 8, TCLP, Welding Furne,	ORGANICS - METH	Salmonella: +/- E.coli O157:H7:	Listerie: +/- Aerobic Plate Count:	18	Saure		Sample Volume	g .	Watrix Code	Date	Time	EM Numi		KIO!
	·	F 2		PEST PE	1 2 3	3	8 2	3 2	m 3	8 8	Mold:	₽:	: ا ≥	ğ Ş	Collected		Uer	Only)	- 1
Cilent sample ID number (Sample ID's must be unique)			5 3	3 €	8	!	MICRO	DBIOL	.OGY	3			*	nimiddiyy	hh/mm a/p	 		_
1 3W-83011 - E		X							<u> </u>	. . .		69	4 /	<u> </u>	9/32/11		805		
2 3W-93011 -S			\Box	L_	<u> </u>			\bot				691	H				<u> </u>	97	2
3 360 930H-N												691	1				}	3	3
43W 93011-W	ar min must , agreed using data or has non-very market and a second		П									691	7		₩.			9	4
8 3W-100311-S)								T				451	oll		10/3/11			9	5
8 3W-100311 -W Exclusion Zone Sumpling				_			7		†-†-			868						91	
7 341-49034 - E						-			11	11		930						9	Ť
8 341 (00311 - A/)				_		1-1	_			++		434		,				9	
9	·	- ,			 	† †	++	+	11	11			3	1					<u>~</u>
7 3W-1003H - E (8 3W-1003H - N) 8	· · · · · · · · · · · · · · · · · · ·			1	 -	1		1		++	11-	1		1			 		-
Number of samples received: (Additio	nal aampies shall be listad on	attache	ed long	fonn	.)		المسلسان	I							-L	 			است
NOTE: RB will arrityze incerning samples based upon inibrmation received and will not be arritysis as indeplied on eat Chain of Custody shall consist as a material samples agreem													ialiva a	græs ti	net automiseion	of the following w	unples for requi	ested	
	rair	,					1	2, 2,				· T							
Relinquished By:	ratk				ime:			-						ole Co). (F°)	ndition:		Sealed /es / No 🧹	Intact Yest Mn	
Received By: // Call Da	te/Time: 10 · 5~ //				Semi-	er: {		UY	2				. 0.14	. ()		,03/10		· • • • • • • • • • • • • • • • • • • •	_
Rasulta: Contacl Phone Emmi Fax Dale	Time Initi	als	Cont	tact			Phone	Em	ail F	BX		Date	3		Ţ	ime	ınitials	<u> </u>	

Phone Email Fax

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Date

Time

Initials

Contact

Phone Email Fax

Date

Time

Initials

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

A = Amosite	F = Fiber
An = Anthophyllite	B = Bundle
C = Chrysotile	C = Cluster
Cr = Crocidolite	M = Matrix
T = Tramolita	

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

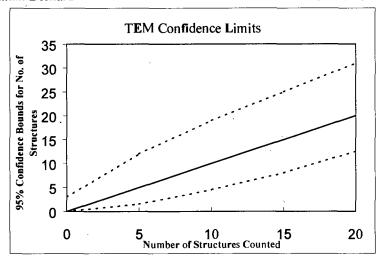
Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Laboratory name:	REI
Instrument	JEOL 100(N)S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	Rak
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	694
Date received by lab	10/5/11
Lab Job Nuntber	221950
Lab Sample Number	805791

F-Factor Calculation (Indirect Pre	eps Only):
Fraction of primary filler used	
Total Resuspension Volume (nil)	
Volume Applied to secondary litter (ml)	

Analyzed by	JB
Analysis date	10/5/11
Method (D=Oirect, I=Indirect, IA=Indirect, ashed)	5
Counting rules (ISO, AHERA, ASTM)	Alt
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

10/c/01

Grid	Grid Opening	Structure	No. of St	mctures	Dimer	nsions Identification		Identification Mineral Class				1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketcti/Comments	Sketch	Photo	EDS
A	K4-4	M					,							
	H4-4	M			9) 120	A 90	Tho in Jun	4	5	7/2 deba	5		
	64-4	M			Pu	2/2	70	chain hu	+	5-7	The debros			
	F4-4	2						18		10/51	/,			
	E4-4	M							7	17	·			
3	H4-b	S												
	64-6	W												
	F4-6	<i>(</i> \)			-		`							1
	E46	ND						·						·
	C4-60	ND					;							

Laboratory name:	REI
Instrument	JEOL 100 N S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L=	0.28 um
Scale: 1D=	0.05 6 um
Primary filter area (min2)	386
Secondary Filter Area (mm2)	
QA Tyoe	

Rak
A
694
10/5/11
221950
805792

Lab Sample Number:	803792
F-Factor Calculation (Indirect Pre	ps Only):
Fraction of primary litter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	J16
Anatysis date	10/5/11
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	15
Counting mies (ISO, AHERA, ASTM)	Alt
Grid storage togation	Month Analyzed
Scope Alignment	Date Analyzed

Grid Opening	Structure	No. of Str	nctures	Dimer	nsions	Identification	Mineral Class				1 = ves, blank ≃ no		⊐ no
· ·	Туре	Primary	Total	Length	Width		Amphibole	·c	NAM	Sketch/Comments	Sketch	Photo	EDS
H6-4	NP	建设设置											
46-4	ND					1	·						
F6-4	W			f	hs	A	30 Go colo	ut	5	Lo deby			
65-1	MD		_ •	P	100	B 6	Delinh	inf	5	o debire			
F5-1	W		,		7			6		/			L
K43	MD		·				Afro	gu/	0/5/0		{ 		
H4-3	W	****						/ -	1				
K5=3	NP						. /						
H5-3	M									-			
F6-3	ND												
_	(ab-4) F(b-4) (a)5-1 F5-1	G6-4 ND F6-4 ND G5-1 ND F5-1 ND K43 ND H4-3 ND K5-3 ND	H6-4 ND G6-4 ND F6-4 ND G5-1 ND F5-1 ND K4-3 ND H4-3 ND	H6-4 ND G6-4 ND F6-4 ND G5-1 ND F5-1 ND K4-3 ND H4-3 ND	H6-4 ND G6-4 ND F6-4 ND G5-1 ND F5-1 ND K4-3 ND H4-3 ND K5-3 ND	H6-4 ND G6-4 ND F6-4 ND G5-1 ND F5-1 ND K4-3 ND H4-3 ND	H6-4 ND G6-4 ND G5-1 ND F5-1 ND F4-3 ND H4-3 ND H5-3 ND H5-3 ND	H6-4 ND G6-4 ND G5-1 ND F5-1 ND F4-3 ND H5-3 NP H5-3 ND	H6-4 ND G6-4 ND G5-1 ND H4-3 ND H5-3 ND H5-3 ND	H6-4 ND G5-1 ND G5-1 ND G5-1 ND G4-3 ND H5-3 ND H5-3 ND	H6-4 ND F6-4 ND F6-4 ND F8-1 ND F3-1 ND F3-1 ND F4-3 ND H5-3 ND H5-3 ND	H6-4 ND G6-4 ND F6-4 ND F6-4 ND Fnp B 60 % in hart 5 / debre F5-1 M K4-3 ND H5-3 ND H5-3 M	H6-4 ND F6-4 ND F6-4 ND F6-4 ND F1-1 ND F1-

Laboratory name:	REI
Instmment	JEOL 100(N)S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 10 =	0.056 um
Primary filler area (nvn2)	385
Secondary Filter Area (mm2)	
QA Type	

Client:	ROR
Sample Tyne (A=Air, O=Dusi):	A
Air volume (L) or dust area (cm2)	694
Oate received by lab	10/5/11
Lab Job Number:	221950
Lab Samole Number:	805793

Lab Samole Number:	805795
F-Factor Calculation (Indirect Pre	eps Only):
Frection of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (mi)	

Analyzed by	J16
Analysis date	10/911
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	5
Counting mies (ISO, AHERA, ASTM)	Alt
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	nctures	Dimensions		Dimensions Identi		Identification	Mineral Class			1 a yes, blank		= no
	,	Туре	Primary	Total	Length	Width		Amphibote	,c	NAM	Sketch/Comments	Sketch	Photo	EDS	
A	F3-4	du	TEMEN.	·											
	E3-4	ND					<u> </u>	0	,						
	C3-4	ND			K	40 /	7	La way	_	3-	5 Lo Jehn	ارزح	·		
	33-4	M			1	7.DL	5 NA	A	1				·		
	C4-4	ND				7	, ,	Han	10	15/11					
B	(92-3	ND							. /			·		· · ·	
	F2-3	ND					,		·						
	EZZ	ND					•								
	cz-3	W)													
	F3-10	NT												·	

Laboratory name:	REI
Instmment	JEOL 100(N)S
Voltage (KV)	100 KV
Magnification	20KX IDKX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

Citent:	ROR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	694
Date received by lab	10/5/11
Lab Job Number	221950
Lab Sample Number:	805794

Can outriple Harrison	
F-Factor Calculation (Indirect Pr	eps Only):
Fraction of primary litter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (m0	

Analyzed by	JB
Analysis date	10/5/11
Method (O≕Direct, i=Indirect, IA=Indirect, ashed)	75
Counting miles (ISO, AHERA, ASTM)	Alt
Grid storage (ocation	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Strncture	No. of St	mctures	Dime	rsions	Identification	Identification Mineral Class				1 = yes, blank = no		
0	J	Type	Primary	Total	Length	Width		Amphibole	·C	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K3-4	NP			·		<u> </u>	:					·	
	H-24	NO							4					
	634	M)		,	Ro	40)	S	Dho who	+	5/2	debris			
	F3-4	N			Pur		9/	Zonta	\neq	5	dobris			
	E3-4	ND						1		1	1			
B	K4-1	MD		1				Thous	(0)	5k1				
	HU-1	NI						7 7	7					
	G14-1	N()					. 7							
	F4-1	W								·				
	C4-1	W					ì							

Laboratory name:	REI
instmment	JEOL 100(N)S
Voltage (KV)	100 KV
Magnification	20KX tDKX
(arid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: ID =	0.058 um
Primary filter area (mm2)	385
Secondary Filler Area (mm2)	
QA Tyoe	

Client :	Rak
Sample Type (AoAb, D=Oust):	A
Air volume (L) or dust area (cm2)	950
Date received by lab	10/5/11
Lab Job Number:	221950
Lab Samole Number:	805795
'	•

F-Factor Calculation (Indirect Preps Only):					
Fraction of pdmary filler used					
Total Resuspension Volume (ml)					
Volume Applied to secondary litter (ml)					

Analyzed by	J16
Analysis date	10/6/11
Method (D=Direct, l=Indirect, IA=Indirect, eshed)	5
Counting mies (ISO, AHERA, ASTM)	AIT
Grid storage locstion	Month Analyzed
Scope Alignment	Date Analyzed

Grld	Grid Opening	Structure	No. of Structures		tures Dimensions		Identification	Mineral Class	Mineral Class			1 = ves, blank = no		
Cita		Туре	Primary	Total	Length	WMth	, do minio de do m	Amphibole	·c_	NAM	Sketch/Comments	Sketch	Photo	EDS
A	612-4	ND				<u> </u>								
	F2-4	ND		٠.										
	EZ-4	ND				Pm	2 Ka	Ohmfant	5	1/2 1	ebris			
	CZ-4	ND				242	1 1	50% . n h	nt.		ebris			
B	43-6	راء - حام							R		oh h			
,	F3-6	A/D_				,		-/-	7	9	77			
	63-6	\(\sigma_i\)										-		
	C5-4	NO												
	, ,													
												<u> </u>		-
								***************************************				-1		Day 9 200

Laboratory name:	REI
Instmment	JEOL 100(N)S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.05 6 um
Primary fitter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	Rak
Sample Type (A∘Alr, D≕Dust):	A
Air volume (L) or dust araa (cm2)	868
Date received by lab	10/5/11
Lab Job Number:	221950
Lab Sample Number:	805796

F-Factor Calculation (Indirect Preps Only):					
Fraction of primery filter used					
Total Resuspension Volume (mi)					
Volume Applied to secondary filter (mi)			_		

Analyzed by	JB
Analysis date	106/11
Method (D=DirecL t=Indirect; IA=Indirect, ashed)	7
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	mctures	Dimer	nsions	hientifieation	Mineral Class				1 = y	es, blank	= no
		Туре	Primary	Total	Length	Width		Amphibole	.c	NAM	Sketch/Comments	Sketch	Photo	EDS
A	F4-1	MD												_
.,	£4-1	ND				Pin	woA 70	0% intact	3-5	% de	bris			
	c4-1	CN		•		Pr	n 15 60	% intent	3-5	0/1	2014			
	B4-1	ND						B	10	le lu				
B	63-3	ND							/ /	/				
	F3-3	ND			•									
	E3-3	ND												
	C4-6	ND						·						
								·						

Laboratory name:	REt
Instmment	JEOL 10t(N)S
Voltage (KV)	100 KV
Magnification	20KX IDKX
Grid opening area (mm2)	0.011
Scale: IL=	0,28 um
Scale: 1D=	0.056 um
Primary filter area	385
Secondary Filter Area (mm2)	•
QA Type	

Kak
A
939
10/5/11
221950
805797

F-Factor Calculation (Indirect Pr	reps Only):
Fraction of primary filter used	
Total Resuspension Voluma (mi)	
Volume Applied to secondary filter (ml)	

Analyzed by	JB
Analysis date	10/6/11
Method (D=Oirect, l=Indirect, IA=Indirect, ashed)	5
Counting mies (ISO, AHERA, ASTM)	Alt
Grid storage location	Month Analyzed
Scooe Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of St	mctures	Dime	Dimensions klentification		Dimensions kientification Mineral Class				1 = <u>v</u>	es, blank	= no
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	614-1	ND				\sim								
	F4-1	ND				Pu	0A	90%	bu	r f	3.5h	deb	C1.5	
	E4-1	M				20	3/3	70 % W	Lus	F	350/	doh	n'5	
	C4-1	M			/	7.		Bul	0/6/	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				
	B4-1	CN			•			7	7.7					
13	F4-6	ND												
	4-6	ND			•									
	C4-6	ND					·	-						

Laboratory name:	REI
Instmment	JEOL 100 N S
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening ares (mm2)	0.011
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area	385
Secondary t-liter Area (mm2)	
QA Type	

Client:	ROR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	939
Date received by lab	10/5/11
Lab Job Number	221950
Lab Sample Number	805798

F-Factor Calculation (Indiract Preps Only):				
Fraction of primary filter used	_ •			
Total Resuspension Volume (mi)				
Volume Applied to secondary filter (ml)				

Analyzed by	JB
Analysts date	10/6/11
Method (D=Direct, l=Indirect, IA=Indirect, ashed)	J S
Counting mies (ISO, AHERA, ASTM)	Alt
Grid storage location	Month Analyzed
Scope Alkinment	Date Analyzed

Grid	Grid Opening	Structure Type	No. of Stmchures		Dimensions		Identification	Mineral Class			1 = yes, blank = no			
J			Primary	Total	Length	Width		Amphibola	.c	NAM	Sketch/Comments	Sketch	Photo	EDS
A	K3-6	ND												
	H 3-6	ND	A SA LANGER	٠.	Pa	1/9	A. 70	1/ inhu	/	5%	debris			
	613-6	ND			Pa		80	10. 1 but		5° K	debis			
	F3-6	ND												
3	63-4	M			·			Bank	10/0/		,			
	F3-4	ND			-			1.	7/		·			
	E3-4	ND						,						
	c3-4	ND	Park and any in				,							
										,				
				· .		·								

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, $mm^2 = \# GO \text{ counted } x \text{ Average } GO \text{ Area } (mm)$

Concentration, s/cc = $\frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening